## REMARKS

Applicant appreciates the thorough examination of the application provided by the Office Action of October 4, 2007 (Office Action), and the withdrawal of the finality of the rejections of the Final Office Action of March 19, 2007. Claim 7 and 8 have been amended, and Claims 11, 23, 24, and 26 have been canceled to expedite prosecution. Applicant has carefully reviewed the cited references and submits that the pending claims are patentable in view of the above-amendments and the following remarks.

**Status of the Claims:**

Claims 1-3, 7-11, 15, 16, 19-23, and 27-29 stand rejected under 35 U.S.C. §103 (a) as unpatentable over PCT Published Application No. WO 00/74350 to Rasmusson et al. (Rasmusson) in view of U.S. Pat. No. 7,023,880 to El-Maleh et al. (El-Maleh). Claims 12-14, 24, and 26 stand rejected under 35 U.S.C. §103 (a) as unpatentable over Rasmusson and El-Maleh in further view of U.S. Pat. App. No. 2002/0065045 to Kim (Kim).

**Independent Claims 1, 3, 9, 10, 15, 21, and 22 Are Patentable over Rasmusson in view of El-Maleh:**

Claim 1 recites (paragraph 1 and 2 numbering and emphasis added):

> 1. (Previously Presented) A wireless terminal, comprising:
> a short-range communication module that is configured to communicate first information over a short-range wireless interface with a communication device;
> a cellular transceiver that is configured to communicate second information with a cellular network according to a cellular communication protocol; and
> a processor that is configured to
> **(1)** encode voice in the second information using at least one of an Enhanced Full Rate (EFR) codec and an Adaptive Multi-Rate (AMR) codec for transmission by the cellular transceiver according to a signal processing operation, and
> **(2)** is *configured to selectively encode voice in the first information using at least one of the EFR codec and the AMR codec for communication by the short-range communication module using the signal processing operation based on whether the communication device supports an enhanced communication mode*.

The Office Action concedes on page 3 that Rasmusson does not teach the above-numbered paragraphs **(1)** and **(2)**. However, the Office Action contends that El-Maleh's col.

5, lines 30-44 and col. 8, line 62 to col. 9, line 21 discloses the above-numbered paragraphs **(1)** and **(2)** of Claim 1. The cited sections of El-Maleh are repeated below:

> However, the formatting of the transmission frames is very dissimilar. In a CDMA system, speech is coded using a variable-rate vocoder. In a GSM system or UMTS system, speech is coded using a fixed-rate vocoder or a multi-rate vocoder. An example of a variable-rate vocoder is the Selectable Mode Vocoder (SMV), which is promulgated in IS-893, an example of a multi-rate vocoder is the Adaptive Multi-Rate (AMR) vocoder, which is promulgated in "ETSI EN 301 704 Digital Cellular Telecommunications System; Adaptive Multi-Rate (AMR) Speech Transcoding" (the AMR standard), and an example of a fixed-rate vocoder is a Enhanced Full Rate vocoder, which is promulgated in 3GPP TS 46.060: "Digital cellular telecommunications system (Phase 2+); Enhanced Full Rate (EFR) speech transcoding." (El-Maleh, col. 3, line 30-44).
>
> Voice traffic and data traffic are typically encoded, modulated, and spread before transmission on either the forward or reverse links. The encoding, modulation, and spreading can be implemented in a variety of formats. Predetermined transmit formats, which correspond to a combination of various transmit parameters, can be used to simplify the choice of transmission formats. The transmission format corresponds to a combination of any or all of the following transmission parameters: the modulation scheme used by the system, the number of orthogonal or quasi-orthogonal codes, the data payload size in bits, the duration of the message frame, and/or details regarding the encoding scheme. Some examples of modulation schemes used within communication systems are the Quadrature Phase Shift Keying scheme (QPSK), 8-ary Phase Shift Keying scheme (8-PSK), and 16-ary Quadrature Amplitude Modulation (16-QAM). Some of the various encoding schemes that can be selectively implemented are convolutional encoding schemes, which are implemented at various rates, or turbo coding, which comprises multiple encoding steps separated by interleaving steps. Orthogonal and quasi-orthogonal codes, such as the Walsh code sequences, are used to channelize the information sent to each remote station on the forward link. In other words, Walsh code sequences are used on the forward link to allow the system to overlay multiple users, each assigned a different orthogonal or quasi-orthogonal code, on the same frequency during the same time duration. (El-Maleh, col. 8, line 62 to col. 9, line 21).

The cited sections of El-Maleh describe that EFR and AMR coding are two of several types of coding that can be chosen for design and implementation within a cellular system depending upon what type of cellular system (i.e., CDMA, UMTS, or GSM) is being implemented. Applicant notes that only cellular systems have been described by El-Maleh as using EFR/AMR or any other type of voice encoding. In neither the cited sections nor elsewhere does El-Maleh describe or suggest that a EFR codec or an AMR codec is used to encode voice for communication by a "short-range communication module," which term has

been defined on page 3 of the present application specification as not a cellular communication module. Moreover, El-Maleh does not describe or suggest that the mobile communication terminal selectively switches between using/not using certain voice codecs depending upon whether it is communicating with another communication device that supports an enhanced communication mode.

Consequently, El-Maleh does not describe or suggest second above-numbered paragraph of Claim 1, repeated below:

> **(2)** is *configured to selectively encode voice in the first information using at least one of the EFR codec and the AMR codec for communication by the short-range communication module using the signal processing operation based on whether the communication device supports an enhanced communication mode*.

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest all the recitations of the claims. M.P.E.P. §2143. Consequently, Claim 1 is patentable over Rasmusson in view of El-Maleh because the cited combination does not teach or suggest at least the second above-numbered paragraph of Claim 1.

Independent Claim 3 recites, *inter alia*, "a processor that is configured to encode voice in the second information using at least one of an Enhanced Full Rate (EFR) codec and an Adaptive Multi-Rate (AMR) codec for transmission by the cellular transceiver, and to selectively encode voice in the first information using at least one of the EFR codec and the AMR codec for communication by the Bluetooth module based on whether the remote Bluetooth device supports an enhanced communication mode", which the Office Action concedes is not taught by Rasmusson. El-Maleh does not describe or suggest that a EFR codec or an AMR codec is used to encode voice for communication by a "Bluetooth module" and, moreover, does not describe or suggest that a mobile communication terminal selectively uses a EFR/AMR codec to encode voice depending upon whether it is communicating with remote Bluetooth device that supports an enhanced communication mode. Claim 3 is therefore patentable over Rasmusson in view of El-Maleh because the combination of Rasmusson and El-Maleh does not teach or suggest all the recitations of Claim 3.

Independent Claim 9 recites, *inter alia*, "a processor that is configured to convolutionally encode the second information for transmission by the cellular transceiver according to a signal processing operation, and to *selectively convolutionally* encode the first

information according to the signal processing operation *for communication by the Bluetooth module based on whether the remote Bluetooth device supports an enhanced communication mode*", which the Office Action concedes is not taught by Rasmusson. The Office Action contends that this recitation of Claim 9 is taught by El-Maleh's col. 9, lines 6-21, repeated below (emphasis added):

> Some examples of modulation schemes used within communication systems are the Quadrature Phase Shift Keying scheme (QPSK), 8-ary Phase Shift Keying scheme (8-PSK), and 16-ary Quadrature Amplitude Modulation (16-QAM). Some of the various encoding schemes that can be selectively implemented are *convolutional encoding schemes*, which are implemented at various rates, or turbo coding, which comprises multiple encoding steps separated by interleaving steps. Orthogonal and quasi-orthogonal codes, such as the Walsh code sequences, are used to channelize the information sent to each remote station on the forward link. In other words, Walsh code sequences are used on the forward link to allow the system to overlay multiple users, each assigned a different orthogonal or quasi-orthogonal code, on the same frequency during the same time duration.

Although El-Maleh describes that a cellular system may use a "convolutional encoding scheme," in neither the cited section nor elsewhere does El-Maleh describe or suggest that convolutional coding is used to encode voice for communication by a "Bluetooth module" and, moreover, does not describe or suggest that a mobile communication terminal selectively uses convolutional coding to encode voice depending upon whether it is communicating with a remote Bluetooth device that supports an enhanced communication mode. Claim 9 is therefore patentable over Rasmusson in view of El-Maleh because the combination of Rasmusson and El-Maleh does not teach or suggest all the recitations of Claim 9.

Independent Claim 10 recites, *inter alia*, "a processor that is configured to interleave the second information over time for transmission by the cellular transceiver according to a signal processing operation, and to *selectively interleave* the first information over time according to the signal processing operation *for communication by the Bluetooth module based on whether the remote Bluetooth device supports an enhanced communication mode*", which the Office Action concedes is not taught by Rasmusson. The Office Action contends that this recitation of Claim 10 is taught by El-Maleh's col. 7, lines 53-67, repeated below (emphasis added):

> In contrast, the AMR vocoder uses information as to the quality of the physical channel in order to select the mode, i.e., rate, at which the speech signal is

> sent. Hence, the rate is set explicitly by the network, not by speech activity levels. FIG. 4 is a block diagram of the processing which each class undergoes in an AMR vocoder operating in a W-CDMA environment. Class A bits are CRC coded (block 422a), convolutionally encoded (block 424a), rate matched (block 426a), and interleaved (block 428a) within a transport channel processor 420a. Class B bits are convolutionally encoded (block 424b), rate matched (block 426b), and *interleaved (block 428b)* within a transport channel processor 420b. And Class C bits are rate matched (block 426c) and interleaved (block 428c) within a transport channel processor 420c.

Although El-Maleh describes that in a cellular system "bits are ... interleaved", in neither the cited section nor elsewhere does El-Maleh describe or suggest that information is interleaved over time for communication by a "Bluetooth module" and, moreover, does not describe or suggest that a mobile communication terminal selectively uses information interleaving over time depending upon whether it is communicating with a remote Bluetooth device that supports an enhanced communication mode. Claim 10 is therefore patentable over Rasmusson in view of El-Maleh because the combination of Rasmusson and El-Maleh does not teach or suggest all the recitations of Claim 10.

Independent Claim 15 recites a method of operating the wireless terminal that includes "determining whether a remote Bluetooth device supports an enhanced communication mode." The Office Action contends that this recitation is taught by Rasmusson's age 14, line 30 to page 15, line 10. However, the cited section of Rasmusson contains no description nor suggestion that a determination is made as to whether a remote Bluetooth device supports an enhanced communication mode.

Claim 15 recites that the method further includes "selectively encoding voice in first information using at least one of an Enhanced Full Rate (EFR) codec and an Adaptive Multi-Rate (AMR) codec according to a signal processing operation for communication to the remote Bluetooth device based on whether the remote Bluetooth device supports an enhanced communication mode", which the Office Action concedes is not taught by Rasmusson. The Office Action contends that this recitation is taught by El-Maleh's col. 5, lines 30-44, repeated above regarding Claim 1. However, neither the cited section nor elsewhere does El-Maleh describe or suggest that voice is encoded using EFR/AMR for communication by a "Bluetooth module" and, moreover, does not describe or suggest that a mobile communication terminal selectively encodes voice using EFR/AMR depending upon whether it is communicating with a remote Bluetooth device that supports an enhanced

communication mode. Claim 15 is therefore patentable over Rasmusson in view of El-Maleh because the combination of Rasmusson and El-Maleh does not teach or suggest all the recitations of Claim 15.

Independent Claim 21 is a method that includes recitations corresponding to the wireless terminal of Claim 9, and is submitted to be patentable over Rasmusson in view of El-Maleh for at least the reasons explained above for Claim 9.

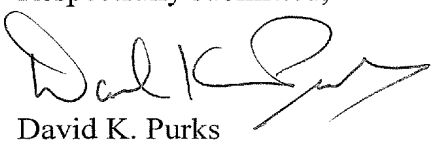
Independent Claim 22 is a method that includes recitations corresponding to the wireless terminal of Claim 10, and is submitted to be patentable over Rasmusson in view of El-Maleh for at least the reasons explained above for Claim 10.

The dependent claims are patentable at least per the patentability of the independent bases claims from which they depend.

## CONCLUSION

Applicants respectfully request withdrawal of all rejections and the allowance of all claims in due course in view of the above-amendments and remarks. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is encouraged to contact the undersigned by telephone at (919) 854-1400.

Respectfully submitted,



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**CERTIFICATION OF TRANSMISSION**

I hereby certify that this correspondence is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4) to the U.S. Patent and Trademark Office on December 21, 2007.

Susan E. Freedman
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